Short-run price performance of venture capital trust in initial public offerings

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Abstract

This paper investigates the short-run price performance of venture capital trust (VCT) initial public offerings (IPOs). We find a very small positive first-day market-adjusted average abnormal return of 0.056% for VCT IPOs. This positive return is non-existent at the end of the seventh and twenty-first trading days. The abnormal returns for VCT IPOs are much smaller than those for non-financial IPOs over the sample period. Furthermore, we find no trading activities in the short-run aftermarket of VCTs.

Keywords: Venture Capital Trusts; Initial Public Offerings; Abnormal Returns

1. Introduction

Entrepreneurs promote economic growth through innovation and competition (Wennekers and Thurik, 1999). However, financing constraints are one of the biggest concerns impacting entrepreneurs around the world (Kerr and Nanda, 2009). While mature companies turn to the stock market to raise debt or equity capital, very small companies usually rely on capital from the founders and often face financial constraints. Various approaches are taken by the governments in different countries to provide finance for entrepreneurs. For example, Shanghai government issued a regulation in January 2016 that the government would compensate the loss of venture capital and the compensation is up to around 6 million RMB. UK government offers tax reliefs for the investors of venture capital trusts (VCTs). The introduction of VCTs, a form of publicly traded private equity listed on the London Stock Exchange, through the legislation of the UK Finance Act 1995, was a practical policy response to a perceived "capital gap", aiming to provide sufficient risk capital to smaller and younger UK companies with growth potential (Cumming, 2003; Cumming and Johan, 2013; Cumming and MacIntosh, 2007; Hayley, 2016; Hou and Yang, 2017). This study examines their short-run price performance in initial public offerings (IPOs).

By the end of June 2017, more than 280 VCTs had been floated on the London Stock Exchange's Main Market, with a market value of about £2100 million. David Hall, the managing director of YFM Equity Partners, suggested that Brexit may benefit VCTs schemes because the rules governing VCTs would be no longer influenced by European Union. He expected that greater freedom and a relaxation of the rules could be one of the one of the

opportunities that Brexit might bring[1]. Despite the importance of VCTs as an asset class, VCT IPOs remain under-researched. The most prominent characteristic of VCTs is that their individual investors can obtain a high rate of income tax relief if they buy VCT shares at the initial public offering (IPO) and continue to hold them for a minimum required period. If an individual investor invested £5000 in new VCT issues on 7th May 2005, he would have received £2000 in income tax relief if he had held the shares for three years. In addition to the income tax savings, the investor receives the majority of the returns as tax-free dividends during the life of the VCT. As indicated by Cumming and MacIntosh (2006), funds such as VCTs and LSIFs are expected to have higher agency costs and lower profitability than private venture capital funds. Therefore, to obtain the tax benefits from investing in VCTs, investors need to be able to afford the long-term investment risk and high agency costs.

The literature documents significantly high abnormal returns for non-financial issuing companies around the world in the short-run aftermarket (see Aggarwal, 2003; Bradley and Jordan, 2002; Derrien and Womack, 2002; Field and Sheehan, 2004; Loughran and Ritter, 2002; Ritter and Welch, 2002). Investors normally expect high abnormal returns when they rush to purchase non-financial IPO shares. AIC (2016) suggests that VCTs are continuously being expanded and are highly likely to continue to boost the UK economy by providing vital finance and expertise to smaller British companies and stimulating high levels of job creation. It is essential that investors wishing to make substantial profits from flipping IPO shares identify whether VCT IPOs are a good choice. It is also important that investors intending to obtain tax benefits by purchasing VCT IPO shares confirm whether taking on the high

[1] Link: https://www.ftadviser.com/investments/2017/02/16/brexit-may-benefit-venture-capital-trust-schemes/

investment risk and agency costs rather than flipping shares is worthwhile. All of the above motivate us to investigate how VCT IPOs perform in the short-run aftermarket.

VCT IPO offerings are not underwritten and all the risk is borne by the issuers. Sponsors play a very limited role in the VCT floating process. The offer price of a non-financial firm is usually determined by the company's directors and their financial advisers. In comparison, most VCT IPOs have the same offer price of 100p, which may be due to the inability to value new VCT shares.

Due to the significant differences in pricing, the floating process, policy and structure, between VCTs and non-financial firms, we can predict that both the price performance and the trading activity of VCT IPOs in the short-run aftermarket should differ from those of non-financial issuing companies. Are there any flipping activities for VCT IPOs? Can VCT investors receive a first-day bonus at the end of the first trading day? To find these answers, we investigate the returns and trading for our sample of VCT IPOs at the end of their first, seventh and twenty-first days of trading in the short run. This study provides enlightenment for investors buying new shares in VCTs. In particular, the results help show whether VCTs represent a good choice for investors looking for initial high returns.

2. Data and Sample

This paper uses 285 VCT IPOs quoted on the London Stock Exchange's Main Market from the first launching period of April 1995 to June 2017. To perform a comparative analysis, we also use the sample of 337 non-financial UK IPOs on London's Main Market from the same period. Our main source of data is the Datastream online service. Other sources are the London Stock Exchange website, KPMG New Issue Statistics and individual offer

prospectuses from Thomson One Banker. Most VCTs are very small, with a market value of no more than £10 million, and only 8 VCTs have market values larger than £30 million.

We divide all IPOs into two categories: non-financial and financial. The population of 285 VCT IPOs accounts for 37.849% of all financial IPOs. The years 2005 and 2006 contribute a large proportion of our sample. By contrast, the smallest contribution came in 2003, when there was only one new VCT. Before 2004, VCT IPOs offered investors the ability to defer a capital gains tax liability, a 20% income tax rebate on their initial investment and no tax to pay on income or gains from the trust. In April 2004, the capital gains tax deferral was scrapped, while the income tax rebate was increased to 40%. Demand soared as a result and new offerings during the 2005 and 2006 tax years were the highest yet for VCTs. Nevertheless, as the 40% income tax rebate cost the Treasury around £490 million, it came as no surprise when the Chancellor announced that, from 6th April 2006, the income tax rebate would fall to 30%, the minimum holding period would increase from three to five years and the size of VCT investee companies would be further limited. As a result, VCT demand declined in 2007 and continued to do so after that.

[Insert Table 1 about here]

3. Empirical Results

We analyse the market-adjusted returns using the HGSC Index as a market benchmark, and later use the FT Small Cap Index as an alternative to test the robustness of the results. The results of using the HGSC Index benchmark are presented in Table 2.

[Insert Table 2 about here]

The average returns on the first trading day for the sample of non-financial IPOs are

6.253%, and the returns on the seventh trading day increase to 8.843% and further to 9.562% on the twenty-first day of trading. All these abnormal returns are statistically significant at the 1% level and the associated relative wealth results are all larger than one. In comparison, for the sample of 285 VCT IPOs, the abnormal mean returns fall from 0.056% for the first trading day, to -0.412% for the twenty-first. Only the abnormal return on the first trading day is statistically significant at the 5% level. The small positive abnormal return on the first trading day disappears in the short run for VCT IPOs.

Table 2 shows that the tendency for positive skewness in the individual return distributions is alleviated in the distributions of differences. Therefore, the results of the difference tests are convincing. For the difference-of-means t-test, we use a one-sided upper-tailed alternative hypothesis that the mean returns of non-financial issuing companies are larger than those of VCT IPOs. For the difference-of-medians test, we apply the Mann-Whitney U test and use a one-sided upper-tailed alternative hypothesis that the median abnormal returns of non-financial IPOs are larger than those of VCT IPOs. The results strongly support these two alternative hypotheses, and the difference between the short-run abnormal returns of VCT IPOs and non-financial IPOs is strongly statistically significant.

In a nutshell, the results solve the first research question for this paper. That is, in the short-run aftermarket, the average abnormal returns for VCT IPOs are much smaller than those for non-financial IPOs, and the small positive returns of VCT IPOs on the first trading day are short lived and are non-existent at the close of both the seventh and twenty-first trading days.

[Insert Table 3 about here]

In Table 3, the 285 VCT IPOs are divided into 23 small groups by issue year. We use the HGSC Index as a benchmark to calculate the average abnormal returns and the associated t-statistics for each group of VCT IPOs. We find significantly positive average abnormal returns of 0.355% at the end of the first trading day for the VCT group in 2010. In most other issue years, VCTs produce negative abnormal returns on the first trading day. Thus, the VCTs listed in 2010 may be the reason for the initial positive returns for the whole sample of VCT IPOs.

[Insert Table 4 about here]

In Table 4, we divide the VCT sample into four groups by size and compare their short-run price performance. Here, we only analyze the returns that are statistically significantly different from zero. Among these four groups, the VCTs with a market value smaller than £10 million clearly produce the largest average abnormal returns of 0.157% at the end of the first trading day.

Finally, we test the effect of investment policy on the price performance of VCT IPOs. Since the investment policy is reflected by the AIC sector classification, we divide the VCTs into 11 small groups according to their AIC sector. In untabulated tests, we found VCTs in the sectors of Generalist pre-qualifying and Specialist in Media pre-qualifying to be most likely to contribute to the initial positive abnormal returns for the whole sample of VCT IPOs at the end of the first trading day. In particular, VCTs in the Media pre-qualifying sector performed best of all the sectors at the close of the first trading day. None of the sectors out-performed the market over either of the following two short-run time horizons (seventh and twenty-first trading days). This is consistent with the findings for the whole VCT sample.

The results obtained using the FT Small Cap Index as an alternative benchmark were qualitatively identical to the results in Tables 2, 3 and 4 and the untabulated tests. Thus, the estimated returns described above are all robust to the choice of benchmark.

We also found that none of the VCTs had any trading activity from the first day to one month after being listed. By contrast, most of the non-financial IPOs had large trading volumes in the immediate aftermarket, even lasting for a few days. Therefore, the short-run trading activity of VCT IPOs is quite different from that of non-financial IPOs, and the secondary market for VCT IPOs is really very illiquid.

On the one hand, the initial positive average returns for VCT IPOs at the end of the first trading day are only 0.056%, which is much smaller than the 30% income tax relief. Therefore, a rational investor is unlikely to forgo the tax benefits in exchange for just the 0.056% initial returns by flipping the VCT IPOs. That means there is no motivation to sell in the immediate aftermarket. On the other hand, the high income tax relief provided by VCTs only applies to the purchase of new shares and not to investors who buy VCT shares in the secondary market. As a result, there is no motivation to buy in the immediate aftermarket.

4. Conclusions

This is the first study to provide evidence of the short-run price performance of VCT IPOs. We document significantly positive abnormal returns of 0.056% on the first day of trading for VCT IPOs, but the positive returns are non-existent at the end of both the seventh and twenty-first trading days. The abnormal returns for VCT IPOs are much smaller than those for non-financial IPOs over all three short-run time horizons. Moreover, most non-financial IPOs have high trading volumes in the first few trading days. However, we find no trading in VCT

IPOs in the short-run aftermarket. This means there is no flipping activity in VCT IPOs. To conclude, most theories explaining the anomalies of non-financial IPOs are not applicable to VCT IPOs. VCT IPOs do not offer a first-day bonus or short-run profits, and investors who are looking for short-run profits should focus on non-financial issuing companies. VCT IPOs will be of interest to investors wishing to take advantage of the tax benefits or to make long-term investments. The results provide implications for the short-run price performance of similar kinds of private equity schemes such as the Enterprise Investment Scheme (EIS) in the UK and the venture capital limited partnership in the US, and also give suggestions to the UK government regarding legislative changes to VCTs, and even regarding the decision over whether or not to continue expanding the volume of VCTs.

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Table 1: UK IPOs on the London Stock Exchange's Main Market by year of issue

Year	All IPOs	All non-financial IPOs	All financial IPOs		
			VCT IPOs	VCTs and other financial IPOs	Proportion of VCTs (%)
1995	28	15	2	13	15.385%
1996	36	18	9	18	50.000%
1997	22	11	6	11	54.545%
1998	64	35	10	29	34.483%
1999	70	21	7	49	14.286%
2000	125	59	17	66	25.758%
2001	82	6	23	76	30.263%
2002	40	12	4	28	14.286%
2003	17	5	1	12	8.333%
2004	44	16	11	28	39.286%
2005	75	15	29	60	48.333%
2006	74	17	33	57	57.895%
2007	59	16	21	43	48.837%
2008	33	3	19	30	63.333%
2009	20	1	15	19	78.947%
2010	45	10	18	35	51.429%
2011	34	5	23	29	79.310%
2012	29	4	15	25	60.000%
2013	34	9	6	25	24.000%
2014	51	23	4	28	14.286%
2015	56	20	7	36	19.444%
2016	28	10	4	18	22.222%
2017	24	6	1	18	5.556%

Total	1090	337	285	753	37.849%
Mean	47.391	14.652	12.391	32.739	37.401%
S.D.	25.605	12.445	9.164	17.902	22.221%

Note: All IPOs include all UK issuing companies in all sectors on the Main Market of the London Stock Exchange from April 1995 to June 2017. All non-financial IPOs + all financial IPOs = all IPOs; VCT IPOs constitute the population of VCT IPOs from April 1995 to June 2017. VCTs and other financial IPOs is the population of IPOs in all financial sectors. Proportion of VCTs is the proportion of VCT IPOs in the entire population of financial IPOs.

Table 2: Abnormal returns on IPOs (HGSC benchmark)

	1st trading day		7th trading day		21st trading day	
HGSC benchmark	Non-financial IPOs (n=337)	VCT IPOs (n=285)	Non-financial IPOs (n=337)	VCT IPOs (n=285)	Non-financial IPOs (n=337)	VCT IPOs (n=285)
$\overline{MAAR_{it}}$ (%)	6.253	0.056	8.843	-0.032	9.562	-0.412
T-statistic	***7.346	**2.403	***4.835	-0.093	***7.148	-0.780
Median (%)	3.370	-0.080	4.762	-0.734	5.023	-1.497
Maximum (%)	45.180	10.651	116.826	11.922	115.892	14.723
Minimum (%)	-12.982	-7.117	-12.811	-15.524	-31.112	-18.138
Skewness	0.689	1.778	8.060	1.016	6.002	0.376
Kurtosis	10.38536	21.094	8.684	8.241	7.985	4.216
Dmean t-statistic	*** 6.931		*** 3.345		*** 3.824	
Dmedian U statistic	*** 3.180		*** 4.505		*** 4.597	
WR_t	1.047	1.003	1.086	0.996	1.088	0.993

Note: The sample mean abnormal return of $\overline{MAAR_{it}}$ is calculated using the following steps: (1) $R_{it} = (P_{it} / P_{i0}) - 1$, where P_{it} is the price of stock i, P_{i0} is the offer price of stock i and R_{it} is the raw return of stock i. (2) $R_{mt} = (P_{mt} / P_{m0}) - 1$, where P_{mt} is the market index value of each stock i and P_{m0} is the market index value on the offer day of each stock. R_{mt} is the comparable market return. (3) $MAAR_{it} = 100 \times [(1 + R_{it}) / (1 + R_{mt}) - 1]$. (4) $\overline{MAAR_{it}} = 1/N \sum_{i=1}^{N} MAAR_{it}$. T-statistic of t-test is for a two-sided alternative hypothesis that the mean return is different from zero. Difference-of-mean t-statistic is for a one-sided upper-tailed alternative hypothesis that the mean return of non-financial IPOs is larger than that of VCT IPOs. Mann-Whitney U statistic is for a one-sided upper-tailed alternative hypothesis that the median return of non-financial IPOs is larger than that of VCT IPOs. Wealth relative is computed as: $WR_t = (1 + 1/N \sum_{i=1}^{N} R_{it}) / (1 + 1/N \sum_{i=1}^{N} R_{mt})$. *** and * stand for statistical significance at the 1% and 10% levels, respectively. Results using FT Small Cap Index as a benchmark were qualitatively identical.

Table 3: Abnormal returns on VCT IPOs by year of issue (HGSC benchmark)

Panel A:

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	n=2	n=9	n=6	n=10	n=7	n=17	n=23	n=4	n=1	n=11	n=29	n=33	n=21	n=19
						1st trading day								
$\overline{MAAR}_{i1}$ (%)	-0.180	0.000	-0.139	-0.694	1.037	0.226	0.035	0.232	-0.183	-0.126	0.085	-0.468	-0.001	0.848
t-statistic	-1.816	0.000	***-6.526	-1.435	0.798	0.176	0.193	0.629	0.000	-1.230	0.834	***-5.757	-0.004	1.682
						7th trading day								
$\overline{MAAR}_{i7}$ (%)	1.327	-0.465	-0.485	-1.939	0.656	4.970	-0.213	1.840	1.300	-0.374	0.041	-2.046	-0.004	1.847
t-statistic	1.171	-0.571	***-9.711	**-2.482	0.236	1.718	-0.236	1.539	0.000	-0.838	0.110	*** -3.872	0.733	0.811
						21st trading day								
$\overline{MAAR}_{i21}$(%)	-0.397	-4.943	0.471	-2.148	0.583	7.332	1.229	2.134	6.952	-2.556	-0.636	-3.143	0.272	3.082
t-statistic	-0.265	***-5.300	1.309	** -2.936	0.450	**2.514	0.580	1.329	0.000	***-5.605	-0.857	***-5.012	0.180	1.221

Panel B:

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
	n=15	n=18	n=23	n=15	n=6	n=4	n=7	n=4	n=1
						1st trading day			
$\overline{MAAR}_{i1}$ (%)	0.304	0.355	-0.135	0.216	0.127	-0.906	0.629	-0.634	-0.373
t-statistic	0.551	**2.852	-0.423	0.703	0.844	-0.917	1.215	-0.473	0.000
						7th trading day			

$\overline{MAAR}_{i7}$(%)	-5.745	-0.525	0.354	1.436	0.809	1.201	1.235	0.998	0.950
t-statistic	***-4.842	-0.832	0.298	1.391	0.606	1.642	1.418	1.304	0.000
						21st trading day			
$\overline{MAAR}_{i21}$(%)	-13.167	-1.472	3.154	3.011	-1.573	-1.550	-1.711	-0.999	-2.050
t-statistic	***-5.876	-1.418	1.014	**2.748	-1.081	-1.102	-1.042	-0.894	0.000

Note: This table divides the 285 VCTs into 23 groups according to their issue year to compare the short-run mean abnormal returns between different groups. ***, ** and * indicate that the mean return is statistically significantly different from zero at the 1%, 5% and 10% significance level, respectively (two-tailed t-test; degrees of freedom = n-1). Results using FT Small Cap benchmark were qualitatively identical.

Table 4: Abnormal returns on VCT IPOs by size (HGSC benchmark)

Size (MV)	0-10 million	10-20 million	20-30 million	above 30 million
	n=223	n=48	n=6	n=8
		1st trading day		
$\overline{MAAR}_{i1}$ (%)	0.157	0.026	-0.955	-1.821
t-statistic	**2.068	0.105	-1.726	-1.021
		7th trading day		
$\overline{MAAR}_{i7}$ (%)	0.168	-1.171	-2.209	2.860
t-statistic	0.519	-0.943	-1.608	0.939
		21st trading day		
$\overline{MAAR}_{i21}$ (%)	-0.171	-1.675	0.628	-0.332
t-statistic	-0.312	-0.968	0.124	-0.125

Note: VCT size is measured by market value. This table divides VCTs with information on market value available into four groups according to their size, to examine whether the size of VCTs has an impact on their short-run abnormal returns. * and *** indicate that the mean return is statistically significantly different from zero at the 10% and 1% level respectively (two-tailed t-test; degrees of freedom = n-1). Results using FT Small Cap benchmark were qualitatively identical.